

**City of Roanoke
Public Works Service Center
Standard Operating Procedure**

Subject: Stormwater Outfall Inspections	Revised:02/12/20
Purpose: To ensure proper guidelines and procedures for stormwater outfall surveillance inspections.	

Responsible Party/ies: Office of Environmental Management

Performance Frequency:

- Annually, spring and fall following at least 2 days of dry weather
- 50 Outfalls shall be surveyed annually
- Outfall selection process shall be by watershed moving around the City in a counter-clockwise direction to each watershed.

Documentation: Software programs: Obtain these programs from City's GIS Division; a user name and password login is required.

- Collector ArcGIS, Outfall Inspection Map – Used to locate outfall locations
- Survey 123 for ArcGIS – Used for data collection and reporting inspection findings

Definitions: n/a

Training:

Trainees must complete the signature section below and a copy of the signed SOP shall be retained on file in the Division's records and made available upon request.

Procedure:

Preparing for data collection:

1. Never perform this SOP alone, always ensure at least one partner is present that has been trained on and is familiar with this SOP

- Notify colleagues in your office of your surveillance plans, where you will be working and when you plan to return from the field.
- Use the "Buddy System" approach to ensure the team's safety when working in the field (Ex: one person always remains in a secure position where they can quickly provide or call for help if needed)

2. Check recent precipitation records; and if there has been more than a trace amount of rain in the past 2 days outfall surveying should **NOT** be performed.

- Access the National Weather Service website: <http://www.erh.noaa.gov/rnk/>
- Follow the link to the Roanoke Climate Archive and scroll down to view the precipitation graph for the current month.
- Make note of the inches of precipitation for each of the past 2 days.

3. The following items are required for completing outfall inspections:

- iPads (fully charged)

- Camera or cell phone with camera
- Manhole Puller/Hook
- Machete or Pocket Saw (for clearing brush and high weeds)
- Manual Data collection supplies (in case of iPad malfunction)
 - Several blank outfall survey sheets
 - Clipboard
 - Pens/pencils
 - Blank Notice of Violation Forms
- Equipment for grab sampling
 - LaMotte Meter Supply Kit
 - DI Water
 - Sharpies
 - Disposable gloves
 - Extension Grabber and containers
 - Ammonia and pH test Strips
 - Chain of Custody Forms
 - Cooler with ice
- PPE
 - Safety Boots
 - Reflective vest
 - Eye Protection
 - Work Gloves
 - Sunscreen
 - Drinking Water
 - 1st Aid Kit
 - Emergency 2-Way Radio

Collecting Data:

Note: Entry onto private property: In many cases gaining access to an outfall may require temporarily trespassing on private property. As an inspector of the stormwater utility, and by order of the City's IDDE ordinance, you have the authority to do this, unless the property is specifically marked "No Trespassing."

- No Trespassing; attempt to find an alternative approach to access the outfall – this may require entry via the creek, or inspecting from the opposite side of the bank.
- Trespassing sign is not posted; knock on the door and otherwise make a good faith effort to notify the resident(s) of your presence, introduce yourself and explain the purpose of your visit.
- If no answer you may proceed; beware of dogs or other potential hazards, always respect the property by minimizing any impact or signs of your presence.

1. Open the Survey 123 App to begin to fill out the outfall inspection sheet.

A. Touch the map image at the top of the data collection screen, and then navigate and zoom to your location.

B. Open the map layers option in the upper right corner of the screen and select the "Outfall_Base" layer

C. Note the Outfall ID Number for your location. **Note: the number will begin with a 4 and be followed by 5 more digits (ex: 400356)**

2. Use the back arrow to navigate back to the data collection screen and begin filling out the outfall inspection sheet.

A. Date and time will auto populate

B. Record your inspector name, the amount of rainfall w/in past 24 hours, and approximate temperature.

C. Choose inspection type – “Outfall Inspection”

- This will change the screen to the outfall surveillance template and prompt you to enter the outfall ID number
- Complete all remaining fields

D. Pay close attention for presence of any pollution indicators and follow prompts for each.

- If a gross pollution is present collect photos, provide comments and if possible obtain a grab sample.
- If indicators suggest problem, highlight the field stating further investigation is necessary.

E. If sufficient flow is present, using a clean sample bottle, collect a grab sample, being careful to only allow the flow, and not the pipe to contact the bottle

- Using the field test strips immediately check the sample for ammonia and pH and record those results under the comments section
- To confirm an illicit discharge, a near term follow-up site inspection may be necessary.
- Enter both comments and photos into the comments and photo section of survey.
- Test sample using field screening kits, or schedule a date to return to site for more detailed screening.

3. Saving the completed form

C. Confirm entire inspection form is accurately completed and confirm all comments have been entered.

D. Upload any pictures taken and enter photo comments

E. Review form for accuracy and completion then press the check mark button “✓” in bottom right of screen.

F. Survey Completed screen will appear and then choose the send later icon option. This saves the survey to your iPad for later upload, or you may select send now.

Investigating Potential Pollution:

1. Safety before proceeding. 1st ensure the safety of all investigators. If working within transportation right of way or traffic lanes, activate the vehicle caution lights and hazard lights. Position the vehicle between on-coming traffic and your work zone. Set out traffic cones if needed to further isolate your work zone.

- ***If you believe that you cannot do this safely, move on to the next location, or postpone the investigation until you are able to get additional help/resources to ensure adequate safety – you are fully empowered to make this call, at all times.*

2. If potential pollution is identified at an outfall, the maps shall be consulted to locate the direction and nearest access point (manhole, inlet grate, etc.) of the associated pipe.

3. In the event that the outfall flow is excessive and/or has a high number of pollution indicators, the inspector shall temporarily halt the survey and report the release as follows:

A. During normal business hours contact the DEQ's Blue Ridge Regional Office in Roanoke: 540-562-6700.

- B. At all other times contact VA Dept. of Emergency Managements 24 hour Emergency Operations Center: 800-468-8892
- C. Do not end call until the operator has indicated that it is okay to do so.
- D. Contact other City of Roanoke resources as may be appropriate to assist with response operations. This may include E-911

4. Using the manhole hook and safe lifting procedures, each successive “upstream” pipe access point shall be examined until flow and/or pollution is no longer present. At that point, the pollution shall be deemed to be entering the system somewhere in between that access point and the next one “downstream.”

A. The inspector shall perform a plain view visual inspection of the area looking for obvious sources of pollution (runoff from neighboring parcels, illicit dumping, illegal connection etc.) If a source is identified, the inspector shall exercise their authority to enter onto the property, unless specifically marked with “No Trespassing” signage, then attempt to stop the source by seeking out and discussing the situation with the person(s) responsible. If necessary, an NOV shall be issued to the person(s) responsible and/or the property owner.

B. If a source can’t be identified, or if the responsible person(s) are unavailable or uncooperative, the inspector shall make note of their efforts and further investigation will be conducted at office of Environmental management.

5. Upon returning to the office, the IDDE Log shall be updated with all pertinent information about the pollution incident and the inspector’s efforts to address it. In the summary, be sure to include dates, times and the identification and contact information for all people you engaged with during the investigation.

Trainee Name: _____ **Signature:** _____

Date Trained: _____

Send completed form to Environmental Management at: envmgmt@roanokeva.gov.